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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Satoshi Sano

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06/14/2004

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EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT

PAPER NUMBER

2674

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DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/875,084

Applicant(s)

SANO ET AL.

Examiner

Kimnhung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application has been examined. The claims 1-7 are pending. The examination results are as following.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Fujitsu Limited (EP patent 0897161 cited by Applicant).

Fujitsu Limited discloses in figure 1 an optical scanning-type touch panel comprising: an optical scanning unit for angularly scanning light in a plane substantially parallel to a predetermined region (see two lights send/receive unit 1a, 1b); a deflecting unit for deflecting scanning light of said optical scanning unit; and a light receiving unit for receiving the deflected scanning light, for detecting a scanning light cut-off position (see cut-off position by finger), which is produced in said predetermined region by an indicator, based on a light receiving output of said light receiving unit that corresponds to a scanning angle (see abstract), and satisfying a condition:

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$d/2+w < D \tan \delta$, where D is a distance from said optical scanning unit to said deflecting unit, w is a width on said deflecting unit from a path of said scanning light to an end on said predetermined region side, d is a beam width of said scanning light, and δ is a scanning start angle, because Fujitsu Limited discloses in figures 3 and 5 an optical system having an distance (D) from optical scanning unit to the deflecting unit (see mirror 16a), deflecting unit having a width (w), and a beam width of scanning (d), and (teta) or δ is a scanning start angle (see figure 3).

From the condition above, if we let $w = 3\text{mm}$

$$D = 45\text{mm}$$

$$d = 40\text{mm}$$

$$\delta = 30 \text{ degrees}$$

$$40/2 + 3 < 45 \tan 30$$

Therefore, $23 < 25.98$, and then $d/2+w < D \tan \delta$.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junkins et al. (US patent 5,525,746 cited by Applicant) in view of Brandt (US patent 5,438,446).

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Regarding claim 1, Junkins et al. disclose in figure 1 that an optical scanning-type touch panel (14, 15) comprising an optical scanning unit; (laser scanner #1, 2#) for angularly scanning light in a plane substantially parallel to a predetermined region; a deflecting unit (see reflected light of lasers, see column 5, lines 65-67 and column 6, lines 1-4) for deflecting scanning light of said optical scanning unit; and a light receiving unit (11B, scanning laser beam#2) for receiving the deflected scanning light, for detecting a scanning light cut-off position (see reflects off the light-reflecting border, and interruption of this beam when pen-down, see column 5, lines 25-29), which is produced in said predetermined region by an indicator (see pen-down, event detector, see figures 5, 9 or stylus position, see column 5 lines 35-39), based on a light receiving output of said light receiving unit that corresponds to a scanning angle (θ_1 and θ_2 , see figure 1). However, Junkins et al. do not disclose the deflecting unit has an asymmetrical shaped about an optical axis. Brandt discloses in figure 4 an optical scanner for scanning a light beam onto an image object having an asymmetrical shaped about an optical axis (see mirror N1 asymmetry through vertical axis 00-01, see column 6, lines 20-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of using the mirror (N1) has an asymmetrical shaped about an optical axis as taught by Brandt into the optical scanning-type touch panel of Junkins et al. because this would for providing the increasing the light receiving area on the system unit.

Regarding claims 2-5, Junkins et al. disclose in figure 1 that an optical scanning-type touch panel as disclosed above. However, Junkins et al. do not disclose discloses wherein

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the shaped of said deflecting unit is asymmetrical in a scanning direction; the shape of the deflecting unit is asymmetrical in a height direction; and a height of said deflecting unit is substantially equal to a height of the optical unit; a width of the deflecting unit is substantially equal to scanning surface opening width of the optical scanning unit in scanning a diagonal section of the predetermined region with light.

In claims 2-3, Brandt discloses in figure 4, the shaped of deflecting unit is in asymmetrical in a scanning direction or asymmetrical in a height direction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of using the shaped of said deflecting unit is asymmetrical in a scanning direction; or the shape of the deflecting unit is asymmetrical in a height direction as taught by Brandt into the optical scanning-type touch panel of Junkins et al. because this would for providing the increasing the light receiving area on the system unit.

From the claims 4-5, it would have been obvious for Junkins et al and Brandt's system to have the shape of the deflecting unit is asymmetrical in a height direction; and a height of said deflecting unit is substantially equal to a height of the optical unit; a width of the deflecting unit is substantially equal to scanning surface opening width of the optical scanning unit in scanning a diagonal section of the predetermined region with light.

As claimed since such a modification would have involved a mere change in the size/shape of a system. A change in size/shape is generally recognized as being within the level of ordinary skill in the art.

See In Rose, 105 USPQ 237 (CCPA 1995) and

See In re Reven, 156 USPQ 679 (CCPA 1968).

Regarding claim 7, Junkins et al. disclose in figure 1 that an optical scanning-type touch panel (14, 15) comprising a light retro-reflector (see retro-reflector collar), an optical scanning unit; (laser scanner #1, 2#) for angularly scanning light in a plane substantially parallel to a predetermined region; a deflecting unit (see reflected light of lasers, see column 5, lines 65-67 and column 6, lines 1-4) for deflecting scanning light of said optical scanning unit; and a light receiving unit (11B, scanning laser beam#2) for receiving the deflected scanning light, for detecting a scanning light cut-of position (see reflects off the light-reflecting border, and interruption of this beam when pen-down, see column 5, lines 25-29), which is produced in said predetermined region by an indicator (see pen-down, event detector, see figures 5, 9 or stylus position, see column 5 lines 35-39), based on a light receiving output of said light receiving unit that corresponds to a scanning angle (θ_1 and θ_2 , see figure 1. However, Junkins et al. do not disclose the optical scanning unit is provided with a protective film having a maximum reflectance at an angle of incidence to a scanning angle at which a quality of the reflected light is minimum. Brandt discloses in figures 5-6, a reflectance of a aluminum mirror substrate having SiO₂ protective coating (protective film) and having the optimal thickness to be employed to minimize reflectance variations in the range of incident light beam scanning angles (that is the quality of reflected light is minimum), therefore, the protective film having maximum reflectance (see column 6, lines 26-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of using protective coating (protective film) and having the optimal thickness to be

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employed to minimize reflectance variations in the range of incident light beam scanning angles as taught by Brandt into the display system of Junkins because this would for providing the protective coating at the 15, 30 and 45 degrees angles of incidence of the source light beam through a range of potential protective layer thickness (see column 6, lines 26-30).

Response To Arguments

5. Applicant's arguments filed on 1-26-04 have been fully considered but they are not persuasive.

Applicant argues that the Office Action cannot assert detail mathematical expressions to reject the claim. However, examiner respectfully disagrees with the argument because besides the using of prior art to reject the claim invention, it is also using the mathematical expressions or the equations in the textbook to reject the claim.

Applicant also argues that Brandt does not disclose the optical scanning said deflecting unit has an asymmetrical shape about an optical axis. Examiner respectfully disagrees with the argument because in figure 4, Brant disclose optical scanning having deflecting unit (see mirrors N1, or N2-IK2 is asymmetry through the optical axis 00-01. For these reasons, the rejections are maintained.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number (703) 308-0425.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD A HJERPE** can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D. C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only).

Hand-delivery response should be brought to: Crystal Park II, 2121 Crystal Drive, Arlington, VA Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kimnhung Nguyen
June 8, 2004


REGINA LIANG
PRIMARY EXAMINER